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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G01B7/34 G01N27/00 G01N33/543 H01J37/317 G11B9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G01B G01N H01J G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WILSON D L ET AL: "Morphological modeling of atomic force microscopy imaging including nanostructure probes and fibrinogen molecules"</p> <p>PHYSICS AND CHEMISTRY OF SEMICONDUCTOR INTERFACES. 23RD ANNUAL CONFERENCE, LA JOLLA, CA, USA, 21-25 JAN. 1996, vol. 14, no. 4, ISSN 0734-211X, JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B (MICROELECTRONICS AND NANOMETER STRUCTURES), JULY-AUG. 1996, AIP FOR AMERICAN VACUUM SOC; USA, pages 2407-2416, XP002050872</p> <p>See especially the abstract and page 2410, first paragraph.</p> <p>see the whole document</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	<p>1-13, 32-46, 65,66, 80-83</p>



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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International Application No

PCT/US 97/13896

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to class No.
Y	EP 0 483 579 A (IBM) 6 May 1992 see the whole document ---	1-13, 32-46, 65, 66, 80-83 10/0276711 12/21/01
A	THESS A ET AL: "CRYSTALLINE ROPES OF METALLIC CARBON NANOTUBES" SCIENCE, vol. 273, no. 5274, 26 July 1996, pages 483-487, XP000610196 ---	1, 12, 13, 15-17, 26-31, 62, 64
P, X	WO 96 38705 A (CALIFORNIA INST OF TECHN) 5 December 1996 ---	1-13, 31-36, 38, 39, 44-49, 53-58, 60, 61, 65, 66, 69, 79-83 49-52, 59
Y	see the whole document ---	49-52, 59
Y	US 5 126 574 A (GALLAGHER ALAN C) 30 June 1992 cited in the application see the whole document ---	1, 81-83
A	EP 0 511 662 A (MATSUSHITA ELECTRIC IND CO LTD) 4 November 1992 see the whole document ---	1, 33, 34, 39, 46-50, 53, 54, 57, 58
A	EP 0 591 595 A (IBM) 13 April 1994 see the whole document ---	1, 11, 18-20, 49, 51, 55-57, 80-83
A	WO 96 18059 A (HYPERION CATALYSIS INT) 13 June 1996 see page 1, line 1 - page 14, line 11 ---	1, 10-13, 23-25, 49, 53, 54
A	SAITO Y ET AL: "Carbon nanocapsules encaging metals and carbides" JOURNAL OF THE PHYSICS AND CHEMISTRY OF SOLIDS, DEC. 1993, UK, vol. 54, no. 12, ISSN 0022-3697, pages 1849-1860, XP002050873 cited in the application ---	1, 11-22

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DAI H ET AL: "Single-wall nanotubes produced by metal-catalyzed disproportionation of carbon monoxide" CHEMICAL PHYSICS LETTERS, 27 SEPT. 1996, ELSEVIER, NETHERLANDS, vol. 260, no. 3-4, ISSN 0009-2614, pages 471-475, XP002050874 cited in the application ----	1, 11-13, 15-17, 23-28
A	WO 95 26371 A (PATRIQUE LTD ;DYATLOV VALERY A (RU); MALEEV VIKTOR (RU)) 5 October 1995 see abstract See especially page 30, lines 8-12 see page 9, line 25 - page 37, line 2 ----	1, 65, 71-73, 75, 78
A	DATABASE INSPEC INSTITUTE OF ELECTRICAL ENGINEERS, STEVENAGE, GB Inspec No. 5119481, FISHBINE B H ET AL: "Graphene nanotubule cold field emission electron sources" XP002050875 see abstract & NOVEL FORMS OF CARBON II SYMPOSIUM, NOVEL FORMS OF CARBON II SYMPOSIUM, SAN FRANCISCO, CA, USA, 4-8 APRIL 1994, 1994, PITTSBURGH, PA, USA, MATER. RES. SOC, USA, pages 319-324, -----	1, 62

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/13896

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0483579 A	06-05-92	DE 69115847 D	08-02-96
		DE 69115847 T	11-07-96
		JP 2093298 C	18-09-96
		JP 4233406 A	21-08-92
		JP 8001382 B	10-01-96
		US 5171992 A	15-12-92
WO 9638705 A	05-12-96	AU 5857596 A	18-12-96
US 5126574 A	30-06-92	US 5015323 A	14-05-91
		US 5294465 A	15-03-94
EP 0511662 A	04-11-92	JP 2561396 B	04-12-96
		JP 4330281 A	18-11-92
		DE 69212062 D	14-08-96
		DE 69212062 T	28-11-96
		JP 2653597 B	17-09-97
		JP 5093623 A	16-04-93
		US 5363697 A	15-11-94
EP 0591595 A	13-04-94	US 5547774 A	20-08-96
WO 9618059 A	13-06-96	AU 4598096 A	26-06-96
		CA 2207282 A	13-06-96
		EP 0796403 A	24-09-97
WO 9526371 A	05-10-95	AU 6289794 A	17-10-95